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HOW IT WORKS?
Since our last Newsletter, two main events have been organized by the Puerto Rico Physiological Society (PRPS).

The first one consisted of an outreach activity in the San Conrado High School located in the municipality of Ponce on November 2, 2011. Over 62 enthusiastic high-school students and their teachers received information about what is physiology, how to become a physiologist, as well as the opportunities for training and/or study physiology in PR and the US. The participants also received information about the research performed in Puerto Rico. Graduate students, research associates and postdoctoral fellows collaborated in this outreach activity by presenting and/or organizing hands-on activities related to the cardiovascular, respiratory and nervous systems.

Drs. Caroline Appleyard from the Ponce School of Medicine and José García from the University of Puerto Rico-Medical Sciences Campus organized this event. This was the first time that this type of activity has been carried out in Ponce, Puerto Rico’s second largest city, located on the south side of the island.

Details of the outreach activity, and data obtained from pre- and post-test evaluations were presented during the FASEB 2012 meeting in San Diego, CA (poster #R6714, for more details, please visit the following link: [http://www.apsarchive.org/resource.cfm?submissionID=6714](http://www.apsarchive.org/resource.cfm?submissionID=6714)).

“Physiology is the study of organisms: from the molecular point of view, up to the system level. More fascinating is that Physiology also studies how the organisms respond to a stimuli such as a drug, exercise, temperature, trauma, gravity, etc...”
The other main event that took place this year was the 2nd PRPS Annual Meeting celebrated on Friday, March 2nd at the Ponce Hilton Resort. Dr. Leon Ferder, past-President, organized the event with the support of the Ponce School of Medicine (PSM) and co-sponsored by Brystol Myers Squibb and the UPR and PSM RISE Programs.

The main topic of the meeting was on Diabetes & Obesity, with speakers from Puerto Rico and USA mainland. Dr. Nadine Gracia, Acting Director of the Office of Minority Health of the US Department of Health and Human Services and Former Advisor on Childhood Obesity in the Office of the First Lady updated the audience on the recent federal initiatives aimed at obesity and health disparities in the Hispanic population.

From the University of Puerto Rico Medical Sciences Campus, Dr. Cynthia Pérez talked about “Obesity and Metabolic Syndrome”, Cristina Palacios discussed her research about “Obesity, Vitamin D and other important nutrients” and Dr. Kaumidi Joshipura presented her work about “Prevention of Obesity and its Consequences Across the Lifespan”.
First Obesity Summit at Ponce

From the mainland, **Dr. Kevin Hall** (Senior Investigator, NIDDK) talked about “Quantifying the effect of energy imbalance on weight change”. This seminar was followed by the presentation of **Dr. Susan Fried** (Boston University School of Medicine) that discussed her research about “Obesity causes and metabolic consequences”. Finally, **Dr. John Hall** (Professor and Chair of Physiology and Biophysics; Director of the Center of Excellence in Cardiovascular-Renal Research at the University of Mississippi Medical Center) gave the plenary lecture entitled: “Pathophysiology of Hypertension in Obesity and Metabolic Syndrome”. Over 100 participants, from the three major medical schools on the island, attended the meeting. Graduate students had the opportunity to present their research in a poster session.

Following the evaluation of posters, three students received a cash award for the best presentations of their research projects. The award was a donation from Brystol Myers Squibb (1st place: Namyr Martínez; 2nd place: Abigail Ruiz and 3rd place: Angel de la Cruz). Detailed information about the meeting was presented in The Physiologist, vol. 55 (2), 2012.
As of July 2012 we have 103 members in our chapter. Included in this group are 66 regular and 37 associate members (high school students). Among the regular members, we have 28 faculty, 4 postdoctoral students, and 19 graduate students from UPR, Ponce Medical Schools and Universidad Central del Caribe School of Medicine.

**New members:**
- Arroyo-Torres, Yaria
- Ayala-Torres, Sylvette
- Capre-Franceschi Sheila M.
- Carmona-Matos, Danilea
- Castro-Roman, Patricia
- Colón-Ramírez, Lisamarie
- de la Cruz, Angel
- Decastro, Pablo
- Díaz-Zabala, Héctor J.
- Escalona de Motta, Gladys
- Ferder, Nadia
- Fox-Carrion, Giovanna
- González-Hernández, Eric G.
- González-Sánchez, Juan A.
- Hernández-Rivera, Siomar
- López-López, Pablo J.
- Loucil-Alicea, Raisa
- Martínez, Namyr
- Parodi-Rullan, Rebecca M.
- Preston, Alan
- Salvo, Virgilio
- Santos, Elizabeth
- Wiscovich-Torres, Mairim G.

**PRPS awards students**

1st
**Namyr Antonio Martínez**, from the Univ. of Puerto Rico Medical Sciences presented the poster: “Membrane Rafts Involvement in the Anti-apoptotic Action of P2Y2 Receptors During Mechanical Injury of 1321N1 Astrocytoma Cells” (Advisors: JD Miranda & WI Silva).

2nd
**Abigail Ruiz** from Ponce School of Medicine and Health Sciences presented the poster: “CXCL12a induces proliferation and migration of human endometrial epithelial cells expressing CXCR4” (Advisor: I Flores).

3rd
**Ángel de la Cruz** from the Universidad Central del Caribe presented the poster: “Glial involvement in the development of Parkinson's disease” (Advisor: M. Inyushin).
HISTORY OF THE FIRST PHYSIOLOGY DEPARTMENT AT PUERTO RICO

We are pleased to inform about the article written by 2011 PRPS' past president, Dr. Nelson Escobales, on the history and development of the Physiology Department at the University in Puerto Rico-School of Medicine. The article, entitled: “The Department of Physiology of the UPR-School of Medicine: History and Contribution to the Physiological Sciences in Puerto Rico 1950-2010.” was published in the PR Health Science Journal (2012) March; 31(1): 3-13 [PMID: 22432402]. We invite all our members to read this article that describes the origin of the first Department of Physiology in Puerto Rico back in the 1950’s.

1ST CARIBBEAN AMERICAN CONFERENCE ON GLIAL INTERACTIONS

On January 17-18, 2012, PRPS member, Dr. Serguei Skatchkov organized a satellite symposium of the 1st Caribbean American Conference on Glial Interactions and Brain Experiments. The symposium Transmitters and Receptors in Astrocytes involved the participation of the invited senior speakers: Drs. F. Kirchhoff, from the University of Saarland at Homburg, Germany, Feliksas Bukauskas and Michael Bennett from the Albert Einstein College of Medicine at New York, and Robert Zorec, at the Molecular Cell Physiology & Cell Engineering, Laboratory of Neuroendocrinology at the University of Ljubljana, Slovenia.

Ph.D. STUDENT RECEIVES AWARD FROM NINDS

On April 14th, 2012, PRPS member (Ph.D. graduate student at Universidad Central del Caribe) Yomarie Rivera was awarded with a Research Supplement to Promote Diversity in Health-Related Research from NIH to work on Polyamines and Cx43 in astrocytes under the mentorship of Dr. Serguei Skatchkov.
Outreach activity at Conrado High School, Ponce Puerto Rico

Last November 2011, a group of 62 high school students from the Conrado High School in Ponce, P.R. participated in the 2011 outreach program of the American Physiological Society, better known as the Physiology Understanding Week or simply, PhUn Week.

One of the aims of this activity is to provide the students the opportunity to meet and learn from research scientists about physiology, and explore physiology as a possible career. The activity was coordinated by members of the Puerto Rico Physiological Society, who organized a 3.5 hrs workshop including in hands-on interactive activities that taught them about how their bodies function and how medical discoveries are made.

The workshop included 30-45 min presentations by graduate students, postdoctoral fellows, and technicians from PSMHS and UPR. These were followed by practical small group hands-on activities.

To test the ability of the workshops to increase student learning, a pre- and a post-test of five questions was administered to the students at the beginning and at the end of the workshop. The questions concerned the key physiological concepts presented and discussed.

A significant increase in the number of correct responses for all questions occurred following the workshop, demonstrating the positive impact the workshop could have on students’ awareness on physiological knowledge.

Following the presentation, the number of responses recognizing that neurons need neurotransmitters for communication increased 18%. At the end of the demonstration, all students (100%) answered correctly that the human body generates electricity. Blood volume and respiration were complex concepts. Prior to the presentations, few students had any real knowledge of them.

The incorporation of practical workshops is beneficial to senior high school students and can help promote understanding and interest in the physiological sciences.

Students from the 12th grade at Conrado High School participating from the PhUn week workshop.

Group of students, faculty and research associates who collaborated in the workshop.
JOIN US AT THE 2013 PRPS ANNUAL MEETING!

The 3rd Annual PRPS meeting will be held at the University of Puerto Rico Medical Sciences Campus, on **February 8, 2013**. This symposium will be focused on “**Mitochondrial Activity and Pathophysiological Consequences**”. At the moment, several proposals have been prepared to obtain support from the Pharmaceutical companies. The relevance of the topics that will be presented during the meeting should predict a total success of the activity. Additional information will be available soon.

Funds for Outreach Activities

The PRPS has recently received $1,000 of the “Chapter Activity Grant Program” from APS which will allow our society to organize outreach activities for high school students. These activities promote the dissemination of Physiology as an alternative field of study and educate the new generation of students about the significance of scientific research. We are planning to develop a short video with information about Physiology and the opportunities.

PRPS Executive Committee

After the 2012 annual meeting, the Executive Committee is constituted by: Dr. Jorge D. Miranda (President), Dr. Caroline B. Appleyard (President-Elect), Dr. Priscila Sanabria (Secretary/Treasurer) and the councilors: Dr. José Garcia, Dr. Eugenio Longo, Dr. Amelia Rivera, Dr. Nelson Escobales (founder and past President) and Dr. León Ferder (past President).

*From left to right: Drs. J. Garcia, N. Escobales, C. Appleyard, L. Ferder, P. Sanabria, A. Rivera and J. Miranda.*
For additional information about our chapter and activities, please contact us at

Puerto Rico Physiological Society, Inc.
P.O. Box 365067, San Juan, P.R. 00936-5067

pr.physiological.soc@gmail.com